

Amendments to the Drawings

The attached sheet of drawings includes changes to Fig. 3. This sheet, which includes Figs. 2 and 3, replaces the original sheet including those same Figures.

Fig. 3 has been amended to show the location of a thin film transistor and passivation layer feature.

Attachment: Replacement Sheet
 Annotated Sheet Showing Changes

Remarks

Claims 1-23 are pending in the present application. By this reply, claim 24 has been canceled without prejudice and its subject matter has been added to claim 23. Claims 1, 10 and 21-23 are independent.

Drawing Objection

The drawing is objected to under 37 CFR §1.83(a) for not showing every feature in the claims. This objection is respectfully traversed.

MPEP §608.02(d), which explains the application of 37 CFR §1.83(a)–(c), states that any structural detail that is of sufficient importance to be described should be shown in the drawings, citing *Ex parte Good*, 1911 C.D. 43, 739 (Com'r Pat. 1911).

Applicants respectfully submit that they did not believe that the structural details of the TFT and its location were of sufficient importance to be described.

Applicants are unsure whether the Examiner believes that the structural details of the TFT and its location are of sufficient importance to be described, or is simply making the requirement to comply with the letter of the Rule.

Nevertheless, Applicants have amended Fig. 3 to show the location of a TFT and a passivation layer, as described in paragraph [0040], for example,

showing the recited TFT as a labeled representation because a more detailed illustration is not needed for a proper understanding of Applicants' claimed invention. No new matter is involved.

Applicants have not amended the drawings to show the method step recited in claim 11 because 37 CFR §1.83(a) does not require that method steps recited in the claims be repeatedly shown again in the drawings. As pointed out in MPEP §608.02(d), Rule 83(a) has been held by the Commissioner to only apply to structural features.

Reconsideration and withdrawal of this objection to the drawings is respectfully requested.

Allowed and Allowable Subject Matter

Applicants acknowledge with appreciation the allowance of claims 21 and 22. Applicants note the Examiner's indication that claims 6 and 18 are objected to, but allowable if rewritten in independent form. Applicants have not re-written these claims in independent form because Applicants believe that claims 1 and 10, from which claims 6 and 18 depend, respectively, are allowable for reasons presented herein. Claim 23 has been amended to add the subject matter of claim 24, which effectively writes claim 24 in independent form. Accordingly, claim 23, as amended, is allowable. Accordingly, claims 6, 18 and 23 should be allowed.

Entry of Amendments

Applicants respectfully submit that it is proper to enter the amendment, which cancels claim 24 and adds the subject matter of claim 24 (which has been indicated as being allowable, to claim 23. The amendment also reduces and simplifies the issues under consideration. Accordingly, entry of this Amendment is respectfully requested.

35 U.S.C. § 103 Rejection

Claims 1-2, 5, 7-10, 11, 13-14, 16 and 19-20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakamoto et al. (U.S. Patent No. 6,650,390) in view of Song et al. (U.S. Patent No. 6,822,723). This rejection, insofar as it pertains to the presently pending claims, is respectfully traversed.

In rejecting claims under 35 U.S.C. §103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention.

Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary

skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. These showings must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999). Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Moreover, a factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the

Examiner. See, In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Additionally, a reference may be said to teach away from arriving at a claimed invention when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. The degree of teaching away will of course depend on the particular facts; in general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant. See W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1550-51, 220 USPQ 303, 311 (Fed. Cir. 1983) (the totality of a reference's teachings must be considered), cert. denied, 469 U.S. 851 (1984); In re Spinnoble, 405 F.2d 578, 587, 160 USPQ 237, 244 (CCPA 1969) (references taken in combination teach away since they would produce a "seemingly inoperative device"); In re Caldwell, 319 F.2d 254, 256, 138 USPQ 243, 245 (CCPA 1963) (reference teaches away if it leaves the impression that the product would not have the property sought by the applicant). See, In re Gurley, 31 USPQ2d 1130 (Fed. Cir. 1994).

Applicants respectfully submit that Sakamoto and Song have a number of fundamental differences that teach away from making the proposed modification of Sakamoto in view of Song.

Firstly, Sakamoto discloses that the prior art includes protrusions or projections 114 and 125 on opposite sides of the liquid crystal medium to establish domains but declines to use them in his invention, which is disclosed in Figs. 4-8. In Figs. 4-8, Sakamoto establishes its domains by relying on a slit 425 in its pixel electrode 424.

Thus, one of ordinary skill in the art would have no incentive to use protrusions to set up domains in Sakamoto because Sakamoto discloses them as being in the prior art yet not using them in its disclosed invention shown in Figs. 4-8.

Secondly, Sakamoto's domains are not disclosed to be set up or influenced in any way by its filter 418. Accordingly, one of ordinary skill in the art would have no incentive to modify Sakamoto's filters to set up domains. Moreover, Sakamoto discloses only a single-piece filter 418 in Fig. 4. There is absolutely no disclosure in Sakamoto of a filter with a gap in it. However, this does not stop the Office Action from indicating that "the color filter layer (418) having an opening on the first substrate (411) (the opening is a gap between two color filters different from each other)."

Applicants respectfully submit that this description of Sakamoto is misleading and completely overlooks the fact that Sakamoto clearly discloses that its color filter 418 is a single piece color filter that has no openings or gaps in it.

In view of what is disclosed by Sakamoto, as discussed above, Applicants respectfully submit that one of ordinary skill in the art would have no incentive to use protrusions to establish domains and/or would have no incentive to use an opening in a color filter to establish domains.

By not focusing on these teachings, the Office Action fails to present a fair and balanced description of Sakamoto.

After failing to discuss all of these aspects of Sakamoto, the Office Action admits that "Sakamoto does not explicitly disclose that a protrusion on the second substrate and corresponding to the opening of the color filter."

Applicants respectfully submit that this statement is misleading because, as noted above, Sakamoto does not disclose an opening in any of its color filters. Color filter 418 is disclosed, as shown in Fig. 4, as a single piece filter without any opening.

Nor does Sakamoto ascribe any domain creating or domain-affecting feature to its filter 418.

And, as noted above, Sakamoto teaches away from using protrusions (e.g., projections 114 and 125) to establish or affect domains.

Ignoring all of these teachings, the Office Action proceeds to turn to Song to remedy the deficiencies in Sakamoto, which are not accurately explained, for reasons discussed above.

In cols. 1 and 2, Song discloses a domain type liquid crystal display device that uses an opening pattern at each pixel region; that a protrusion is

formed on the opening pattern or, alternatively, that a protrusion or a hollow may be formed under the opening pattern; and a color filter provided at a second substrate at each pixel region with a groove corresponding to the opening pattern of the pixel electrode on the first substrate. Song also discloses that the color filter may be formed “either at the first substrate or at the second substrate such that each color filter has a groove corresponding to the opening pattern” (col. 2, lines 26-29). Song also discloses that its device has a wide viewing angle (col. 1, lines 6-9).

The Office Action concludes that it would be obvious to one of ordinary skill in the art to modify Sakamoto “with the protrusion on a substrate corresponding to the opening of the color filter (either at the first substrate or at second substrate) as taught by Song to achieve a wide viewing angle in simplified processing steps, since the protrusion corresponding to the opening between color filters makes easy to align the liquid crystal molecules as partitioned.”

Applicants respectfully disagree for a number of reasons.

Firstly, Sakamoto already discloses a display with “high contrast, wide viewing angles and steady excellent viewing characteristics” (col. 9, lines 44-50), and the wide viewing angles appear to be due to the fact that the pixel is divided into a plurality of domains (col. 2, lines 16-21).

The Office Action has presented no objective factual evidence that the viewing angle of Sakamoto’s device will improve because of the proposed

modification of Sakamoto by Song. In fact, based on the disclosure of Sakamoto, it would appear that Sakamoto already has a wide viewing angle device and that one of ordinary skill in the art would not be motivated to turn to Song to improve the wide angle characteristics of Sakamoto. Any suggestion that Song's device would improve the wide-angle characteristics of Sakamoto is just speculation and it is well settled that a rejection cannot properly be based on speculation. An Examiner may not, because he or she doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. See, In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968).

Accordingly, the Office Action does not make out a *prima facie* case of proper motivation to make the proposed modification of Sakamoto in view of Song.

Secondly, the speculative argument in the Office Action that the proposed modification of Sakamoto by Song would result in "simplified processing steps" is also not supported by any objective factual evidence of record, is conclusionary and devoid of detail.

Actually, Sakamoto discloses, in col. 9, four specifically mentioned construction steps to make its device (short of adding circuitry), from line 14 to line 40. Song discloses, from col. 1, line 61 to col. 2, line 33, making its device with no fewer steps than disclosed by Sakamoto. Both references disclose a

pixel electrode with a gap, so there are no more steps needed in Sakamoto than in Song to form the pixel electrode gap. In Song, the filters have to be grooved, a step that is not needed in Sakamoto. Additionally, Song has to provide a protrusion on or under, or a groove under, the opening pattern, which Sakamoto does not have to provide. Thus, it would not appear that Song uses simplified steps with respect to those employed by Sakamoto to make its device.

Accordingly, the Office Action fails to provide objective factual evidence that one of ordinary skill in the art would be motivated to make the asserted modification of Sakamoto in view of Song because it would require simplified processing steps.

Thirdly, Sakamoto achieves a wide-angle domain type display without using protrusions that Sakamoto describes are in the prior art. Applicants respectfully submit that it would be counterintuitive to revert to providing protrusions in Sakamoto when Sakamoto discloses that its device does not use such a prior art feature.

Fourthly, Sakamoto discloses a working wide-angle device without the need to go to the trouble and expense of grooving its filters. Applicants respectfully submit that this would teach away from modifying Sakamoto to provide grooved filters instead of Sakamoto's single piece filters.

Fifthly, the office Action never gets down to the details of exactly what specific components of Sakamoto will be done away with or modified by certain

specific components of Song, and exactly how this un-detailed modification will result in a working device. The Office Action's vaguely stated modification of Sakamoto by Song ("with the protrusion on a substrate corresponding to the opening of the color filter") is just an open invitation to experimentation. Applicants respectfully submit that "obvious to try" is not a proper standard on which to reject claims. The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art." In re Dow Chem. Co., 837 F.2d 469, 473 [5 USPQ2d 1529] (Fed. Cir. 1988). Obviousness requires one of ordinary skill in the art have a reasonable expectation of success as to the invention—"obvious to try" is an incorrect standards. In re O'Farrell, 853 F.2d 894, 903 [7 USPQ2d 1673] (Fed. Cir. 1988).

Sixthly, Applicants respectfully submit that Song has significantly different, structural arrangements than Sakamoto and that one of ordinary skill in the art would recognize this and not try to pick and choose different features of Song to modify the substantially different structure of Sakamoto in some way that is devoid of meaningful details absent a blueprint that has not been provided by the Office Action. In this regard, Applicants respectfully submit that it is well settled that the Examiner may not pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such

reference fairly suggests to one of ordinary skill in the art. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve Inc., 796 F.2d 443, 448, 230 USPQ 416, 419 (Fed. Cir. 1986), cert. denied, 484 U.S. 823 (1987) and In re Kamm, 452 F.2d 1052, 1057, 172 USPQ 298, 301-2 (CCPA 1972), and obviousness cannot be established by locating references which describe various aspects of appellant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what appellants have done. Ex parte Levengood, 28 USPQ2d 1300, 1302 (Bd. App. & Int. 1993). Here the Office Action fails to present any persuasive evidence of such a motivating force and the only blueprint for making the proposed vague modification of Sakamoto is Applicants' disclosure, which is not a proper basis for rejection Applicants' claims.

Accordingly, this rejection fails to make out a *prima facie* case of proper motivation to modify Sakamoto in view of Song, as suggested, and thus, fails to make out a *prima facie* case of obviousness of the claimed invention.

Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 3, 4, 12 and 17 stand rejected under 35 U.S.C. §103(a) as unpatentable over Sakamoto and Song, as applied above, and further in view of U.S. Patent 6,583,837 to Fukumoto et al. ("Fukumoto"). This rejection is respectfully traversed.

The rejection is improper because of Sakamoto in view of Song fails to render obvious the invention recited in independent claims 1 or 10, from which these claims depend, for reasons noted above. Moreover Fukumoto is not applied to remedy the deficiencies noted above regarding the Sakamoto-Song reference combination.

Accordingly, even if it were obvious to modify the Sakamoto-Song reference combination in view of Fukumoto, the resulting modified version of Sakamoto-Song would not render claims 3, 4, 12 and 17 obvious.

Accordingly, claims 3, 4, 12 and 17 are clearly patentable over the applied references, and thus the rejection of claims 3, 4, 12 and 17 is improper and must be withdrawn.

Claim 15 stands rejected under 35 U.S.C. §103(a) as unpatentable over Sakamoto and Song, as applied above, and further in view of U.S. Patent 5,263,888 to Ishihara et al. ("Ishihara"). This rejection is respectfully traversed.

The rejection is improper because of Sakamoto in view of Song fails to render obvious the invention recited in claim 14, from which it depends deficiencies, for reasons noted above. Moreover Ishihara is not applied to remedy those deficiencies.

Accordingly, even if it were obvious to modify the Sakamoto-Song reference combination in view of Ishihara, the resulting modified version of Sakamoto-Song would not render claim 15 obvious.

Accordingly, claim 15 is clearly patentable over the applied references, and thus the rejection of claim 15 is improper and must be withdrawn.

Conclusion

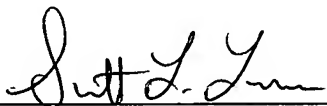
For the foregoing reasons and in view of the above clarifying amendments, the Examiner is respectfully requested to reconsider and withdraw all of the objections and rejections of record, and to provide an early issuance of a Notice of Allowance.

Should there be any outstanding matters which need to be resolved in the present application, the Examiner is respectfully requested to contact Robert J. Webster (Registration No. 46,472) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachments: Replacement Sheet (Figs. 2 and 3)
Annotated Sheet Showing Changes to Fig. 3



FIG. 2
Related Art

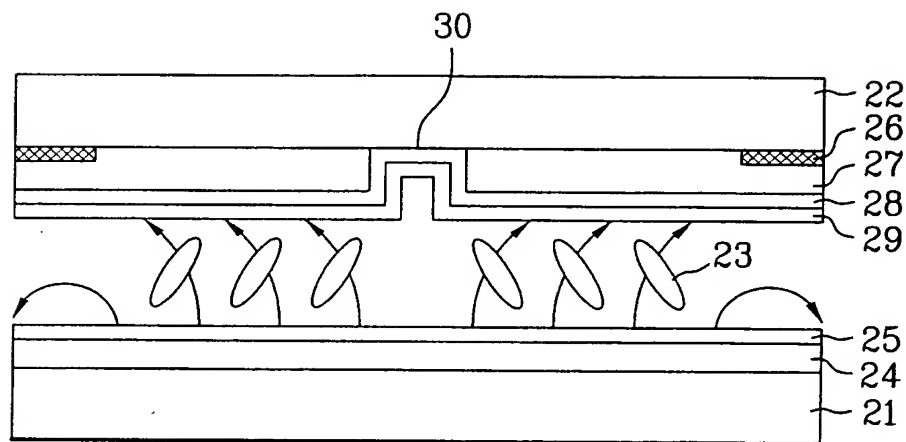
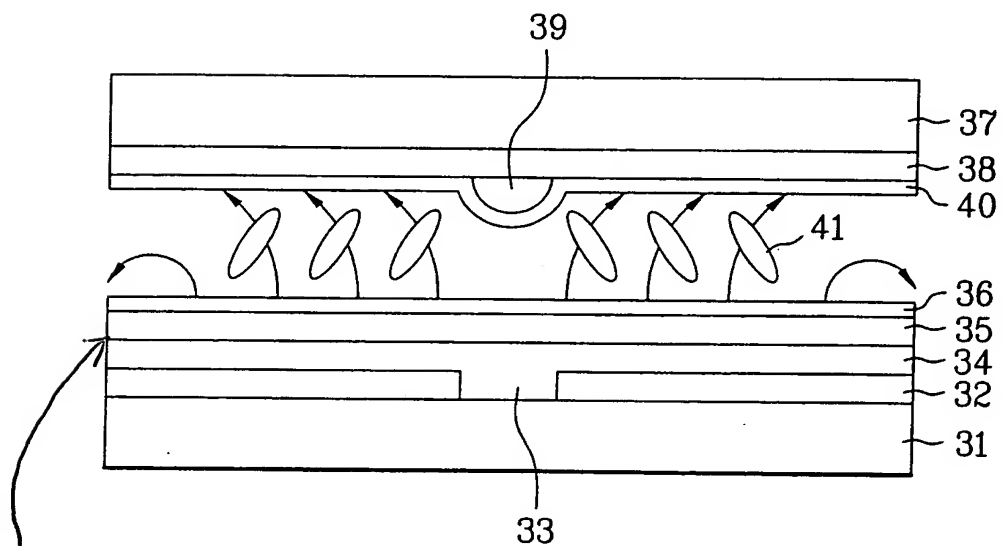


FIG. 3



TFT & Passivation Layer